Patent Claims

1. Monoclonal antibody, or fragments thereof, for isolating and/or identifying at least one cell population which is selected from the group consisting of haematopoietic stem cells, neuronal stem cells, neuronal progenitor cells, mesenchymal stem cells and mesenchymal progenitor cells, wherein the antibody, or a fragment thereof, binds to an antigen which is the same as that bound by an antibody which is produced by the hybridoma cell lines CUB1, CUB2, CUB3 and CUB4, which were deposited in the Deutsche Sammlung für Mikroorganismen und Zellkulturen [German collection of microorganisms and cell cultures] (DSMZ), in accordance with the Budapest treaty, under the numbers DSM ACC2569, DSM ACC2566 and DSM ACC2565, on 14.08.2002, and DSM ACC2551, on 12.07.2002.

2. Monoclonal antibody, or fragment thereof, of Claim 1, which is produced by the hybridoma cell line CUB1, which is deposited in the DSMZ under the number DSM ACC2569.

3. Monoclonal antibody, or fragment thereof, of Claim 1, which is produced by the hybridoma cell line CUB2, which is deposited in the DSMZ under the number DSM ACC2566.

4. Monoclonal antibody, or fragment thereof, of Claim 1, which is produced by the hybridoma cell line CUB3, which is deposited in the DSMZ under the number DSM ACC2565.

5. Monoclonal antibody, or fragment thereof, of Claim 1, which is produced by the hybridoma cell line CUB4, which is deposited in the DSMZ under the number DSM ACC2551.

6. Hybridoma cell line, which produces an antibody according to Claim 1.

7. Hybridoma cell line, which produces an antibody according to Claim 2.

8. Hybridoma cell line, which produces an antibody according to Claim 3.

9. Hybridoma cell line, which produces an antibody according to Claim 4.

10. Hybridoma cell line, which produces an antibody according to Claim 5.

11. A method for isolating and/or identifying at least one cell population, which is selected from the group consisting of haematopoietic stem cells, neuronal stem cells, neuronal progenitor cells, mesenchymal stem cells and mesenchymal progenitor cells, comprising the step of contacting said cell population with an antibody, or a fragment thereof, wherein said antibody or fragment binds to an antigen which is the same as that bound by an antibody which is produced by the hybridoma cell lines CUB1, CUB2, CUB3 and CUB4, which were deposited in the DSMZ under the numbers DSM ACC2569, DSM ACC2566 and DSM ACC2565, on 14.08.2002, and DSM ACC2551, on 12.07.2002.

12. The method of Claim 7, wherein said antibody is produced by the hybridoma cell lines CUB1, CUB2, CUB3 and CUB4, which were deposited in the DSMZ under the numbers DSM ACC2569, DSM ACC2566 and DSM ACC2565, on 14.08.2002, and DSM ACC2551, on 12.07.2002.

13. A method for isolating and/or identifying at least one cell population, which is selected from the group consisting of haematopoietic stem cells, neuronal stem cells, neuronal progenitor cells, mesenchymal stem cells and mesenchymal progenitor cells, comprising the following steps:

     (a) bringing a sample of a cell suspension, which contains at least one cell population, into contact with the monoclonal antibody of Claim 1, or a fragment thereof, and

     (b) isolating and/or identifying the cells which are linked to the monoclonal antibody or the fragment thereof.

14. A method for isolating and/or identifying at least one cell population, which is selected from the group consisting of haematopoietic stem cells, neuronal stem cells, neuronal progenitor cells, mesenchymal stem cells and mesenchymal progenitor cells, comprising the following steps:

     (a) bringing a sample of a cell suspension which contains at least one cell population into contact with a monoclonal antibody of Claim 1, or a fragment thereof, and with at

least one further antibody which binds to at least one of the cell populations, and

(b) isolating and/or identifying the cells which are linked to the monoclonal antibody or the fragment thereof.

15. A method for analyzing patient samples, in particular tissue biopsies, bone marrow biopsies and/or blood samples, comprising the steps of contacting a sample supposed to contain stem cells with the antibody of Claim 1.

16. A method for categorizing leukaemias, comprising the steps of contacting a sample supposed to contain stem cells with the antibody of Claim 1.

17. A method for preparing antibodies, or fragments thereof, for isolating and/or identifying at least one cell population which is selected from the group consisting of haematopoietic stem cells, neuronal stem cells, neuronal progenitor cells, mesenchymal stem cells and mesenchymal progenitor cells, wherein an animal is immunized with an antigen selected from the group consisting of the protein CDCP-1 and the nucleic acid which encodes the CDCP-1 antigen protein.

18. Pharmaceutical composition comprising at least one monoclonal antibody according to Claim 1, or fragments thereof.

19. Pharmaceutical composition comprising at least one mono-
clonal antibody according to Claim 2, or fragments
thereof.

20. Pharmaceutical composition comprising at least one mono-
clonal antibody according to Claim 3, or fragments
thereof.

21. Pharmaceutical composition comprising at least one mono-
clonal antibody according to Claim 4, or fragments
thereof.

22. Pharmaceutical composition comprising at least one mono-
clonal antibody according to Claim 5, or fragments
thereof.

23. Kit, comprising at least one monoclonal antibody according
to Claim 1, or fragments thereof.

24. Kit, comprising at least one monoclonal antibody according
to Claim 2, or fragments thereof.

25. Kit, comprising at least one monoclonal antibody according
to Claim 3, or fragments thereof.

26. Kit, comprising at least one monoclonal antibody according
to Claim 4, or fragments thereof.

27. Kit, comprising at least one monoclonal antibody according
to Claim 5, or fragments thereof.